Lab setup for RHCSA by Itay Ben Hur

For the setup we will create three VMs that run rhel9.3 to simulate the test. One will simulate the repository, webfile host, NFS server and NTP server. The other two will simulate the nodes you will be tested on the exam. After configuration we will make snapshots of all the machines so we could practice exam questions again and again.
It is highly recommended to ssh into the machines to do most of the steps since it will allow you to copy and paste effortlessly.
Notice there's a file separate to these setup instructions called "repo_list.txt" which contains a list of packages. Notice it's a limited list, and not the full AppStream and BaseOS of rhel (which will require a lot of storage), so some packages might be missing. If there's a package you figure out is needed for the test and missing from the list, feel free to add it and share the new list with your classmates.

Configure NFS on reposerver:

- dnf install nfs-utils -y
- systemctl enable --now nfs-server
- firewall-cmd --permanent --add-service=nfs
- firewall-cmd --permanent --add-service=mountd
- firewall-cmd --permanent --add-service=rpc-bind
- firewall-cmd --reload
- mkdir -p /export/home/moshe
- cp /etc/skel/.b* /export/home/moshe
- chown -R 2000:2000 /export/home/moshe
- vim /etc/exports
  Inside write:
  ```
  /export/home        172.29.159.0/24(rw,sync,no_root_squash)
  ```
- systemctl restart nfs-server

Configure NTP server:

- dnf install chrony -y
- vim /etc/chrony.conf
- Inside write:
  allow 172.29.159.0/24
- firewall-cmd --permanent --add-service=ntp
- firewall-cmd --reload
- systemctl restart chronyd
- systemctl enable –now chronyd

Configure reposerver:

- dnf install yum-utils createrepo httpd -y
- mkdir /var/www/html/reposerver
- cd /var/www/html/reposerver
- yumdownloader --skip-broken $(cat repo_list.txt) # list file in classroom
- createrepo_c .

Configure a containerfile:

vim /var/www/html/Containerfile

inside write:

```
FROM registry.access.redhat.com/ubi9/ubi:latest

RUN dnf -y install httpd; dnf clean all; systemctl enable httpd;

RUN echo "Successful Web Server Test" | tee /var/www/html/index.html

RUN mkdir /etc/systemd/system/httpd.service.d/; echo -e
'[Service]\nRestart=always' | tee
/etc/systemd/system/httpd.service.d/httpd.conf

EXPOSE 80

CMD [ "/sbin/init" ]
```

- systemctl enable –now httpd
- firewall-cmd --add-service=http --permanent
- firewall-cmd –reload
- semanage fcontext -a -t httpd_sys_content_t "/var/www/html(/.*)?"
- restorecon -R -v /var/www/html

Add a second network device and set it as so:
IP = 172.29.159.150/24
Gateway = 172.29.159.1
DNS = 172.29.159.150
hostname = reposerver

- curl -I 172.29.159.150/reposerver/ # check for status OK

Make sure the other device network device has internet access.
If cannot ping to google.com change the metric of the device with:

- nmcli connection modify <connection-name> ipv4.route-metric 99

- systemctl restart NetworkManager

On node1:

- useradd cindy
- mkdir -p /opt/file
- mkdir -p /opt/processed
- chown -R cindy:cindy /opt/*
- useradd -M -u 2000 -d /mnt/autofs_home/moshe moshe
- dnf install httpd
- echo Bananabread > /var/www/html/index.html
- vim /etc/httpd/conf/httpd.conf
  Inside replace Listen 80 with Listen 82
- systemctl restart httpd # should fail
- systemctl enable –now httpd # should fail
- # run yum repolist and check if the names match
- dnf config-manager --disable rhel-9-for-x86_64-appstream-rpms
- dnf config-manager --disable rhel-9-for-x86_64-baseos-rpms
- yum clean all
- yum repolist

Configure node1 (broken by default)
Don’t do this part from ssh!
Ip node1 = 10.12.13.14/24
hostname node1needtochange

on node2:

- # run yum repolist and check if the names match
- dnf config-manager --disable rhel-9-for-x86_64-appstream-rpms
- dnf config-manager --disable rhel-9-for-x86_64-baseos-rpms
- yum clean all
- yum repolist

Configure node2 (broken by default)
Don’t do this part from ssh!
Ip node2 12.13.14.15/24
hostname node2needtochange

On node 2:

- Add a new 10g disk
- echo randompassyoudontknow | passwd root --stdin
- systemctl set-default network.target

Shutdown all 3 machines and take a snapshot of each